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attention of very few men who are giving their best efforts to research in mathematics. For this reason, the type of college here considered has a most important work in opening the eyes of the student to the possibilities ahead of him and in giving him definite, essential tools with which to work; but such a college blunders if, instead, it tries to give more specialized courses which demand for their full appreciation a preparation which the student cannot have had.

29. While studying the problem of two equal rough bodies, connected by an inelastic wire, resting on an inclined plane, Professor Clifford N. Mills of South Dakota State College met the following interesting expression. If $1/a$ and $1/(a+1)$ are the coefficients of friction, the tension of the wire when the bodies are about to descend becomes a multiple of $\frac{1}{2}[1/a + 1/(a+1)]$. This, when simplified, becomes $(2a+1)/2a(a+1)$. If $2a+1$ and $2a(a+1)$ represent the base and altitude of a right triangle, the hypotenuse is $2a^2+2a+1$. Therefore, this gives a series of numbers which satisfy the relation $x^2+y^2=z^2$, if a is given any value whatsoever. Professor Mills desires to know if this will give all the integers which satisfy the condition that the sum of the squares of two integers equals the square of an integer.

REPLY BY S. LEFSCHETZ, University of Kansas.

If the integers x, y, z , form a Pythagorean set, that is, if they satisfy the relation $x^2 + y^2 = z^2$, then it is well known* that there can be found three other integers m, n, p , such that $x = p(m^2 - n^2)$, $y = 2pmn$, $z = p(m^2 + n^2)$. For $m = a+1$, $n = a$, $p = 1$ the special solution indicated by Professor Mills is obtained.

NOTES AND NEWS.

EDITED BY D. A. ROTHROCK, Indiana University.

PROFESSOR PAUL PAINLEVÉ, of the department of mathematics in the University of Paris, is minister of education in the present French cabinet.

Henry Holt and Company have just published a "Plane Analytic Geometry," by PROFESSOR MAXIME BÔCHER. The last two chapters are devoted to calculus.

Ginn and Company have published "Problems in the Calculus," by DR. D. D. LEIB of the Sheffield Scientific School, Yale University, also "The Theory of Invariants," by PROFESSOR O. E. GLENN, of the University of Pennsylvania.

The sixteenth in the series of Wiley's Mathematical Monograph Series appears as "Diophantine Analysis," by Professor ROBERT D. CARMICHAEL. The same firm has recently published an "Analytic Geometry," by PROFESSOR H. B. PHILLIPS, of the Massachusetts Institute of Technology.

Junior Professors PETER FIELD, L. C. KARPINSKI and T. R. RUNNING have been promoted to associate professorships of mathematics at the University of Michigan, and DRs. T. FORT and T. H. HILDEBRANDT to assistant professorships

* Cf. Bachman, *Zahlentheorie*, Vol. I, p. 192. Also Carmichael, *Diophantine Analysis*, pp. 8-13.

of mathematics. DR. A. L. NELSON has been appointed to an instructorship in mathematics.

In *Science* for October 22 appears a paper by PROFESSOR C. N. MOORE in which he points out the danger of assuming that the coefficient of correlation is necessarily a satisfactory measure of all forms of relationship between two variable quantities, at the same time suggesting a method of attack for determining in what way a particular relationship depends on the value of this coefficient.

The United States Bureau of Education has recently published a bulletin entitled "Mathematics in the lower and middle commercial and industrial schools of various countries represented in the International Commission on the Teaching of Mathematics." It is furnished to teachers of mathematics on application to the Bureau.

"Cubic surfaces and their nodes" is the title of an article by Dr. S. LEFSCHETZ in the *Bulletin* of the University of Kansas, Volume IX, number 6. This bulletin is issued at irregular intervals. The present volume contains 290 pages and 76 plates. It is a science number, containing 21 articles, the one mentioned above being the only one on a mathematical subject. The exchange editor is Dr. U. G. MITCHELL, of the MONTHLY staff.

PROFESSOR H. L. RIETZ, University of Illinois, was appointed a member of a committee of four to investigate the operation of all pension laws enacted in the State of Illinois, "together with the present and future cost thereof, and to collect information as far as possible in regard to the operation of similar laws in other states, and countries, and to make recommendation upon this subject to the next General Assembly."

At the High School Conference held at the University of Illinois on November 18-20, the following mathematical papers were presented: "Algebra from the utilitarian standpoint," by Dr. A. R. Crathorne; "The experimental determination of standards in first year algebra," by Dr. H. O. Rugg; "Report of the committee investigating high school mathematical libraries," by Professor E. H. Taylor; "Graphs in elementary algebra," by Mr. H. C. Zeis; "The function notion in elementary algebra," by Professor J. F. Millis.

The part of the *Encyclopédie des Sciences Mathématiques* which treats the theory of domains of algebraic numbers appeared on June 18, 1915. The first three pages conclude the article on transcendental propositions relating to the theory of numbers and the last seven pages begin the article on complex multiplication. The remaining 86 pages are devoted to algebraic number realms, while the German edition devotes only about 23 pages to this subject. The present part is issued as Tome I, volume 3, fascicule 5, and consists of 96 pages.

The third regular meeting of the Association of Mathematics Teachers of New Jersey was held at Stevens Institute of Technology, November 20, under the Presidency of DEAN HENRY B. FINE. Papers were read as follows: "Mathematics and insurance," by P. C. H. PAPPS; "The proper functioning of a high school course in geometry," by R. T. LE VALLEY; "A review of Bourlet's plane geometry," by B. B. STRANG; and "A high school course in strength of materials," by G. D. ORNER.

The Mathematical Club of the University of Illinois is divided into two sections, known as the Graduate Section and the Undergraduate Section, respectively. The former meets bi-weekly for the consideration of papers involving new results or new methods, while the latter meets monthly for the consideration of questions of general mathematical interest and the solutions of problems. Each meeting lasts about one hour. The Undergraduate Section usually arranges for one social evening meeting annually. For the current year Professor G. A. Miller has been elected chairman of the Graduate Section, and Mr. G. W. Smith, chairman of the Undergraduate Section.

A "mathematics contest" which was held between the Hyde Park High School and University High School of Chicago is described by Mr. RALEIGH SCHORLING in *School Science and Mathematics* for December. In the same issue appear "The proofs of the law of tangents," by R. M. Mathews, "A simple and effective method of solving a polynomial," by C. H. FORSYTH, a "Graphical method for cubic equations," by ALFRED RITTER, and "Historical notes in textbooks on secondary mathematics," by PROFESSOR G. A. MILLER, the last-named article criticizing the accuracy of the historical references made in a recently published high school text.

The Mathematics Club of the University of Kansas is an organization of students with Dr. E. B. STOUFFER as faculty adviser. It was started in 1911 and now has twenty-six members. The Club meets bi-weekly and is carrying out the following program during the present year: Fermat's theorem and allied topics, Dr. S. LEFSCHETZ; "Non-Euclidean geometry," Miss JESSIE JACOBS; "Line construction," Miss ADA WEST; "Who's who in mathematics in America," Dr. U. G. MITCHELL; "Mathematical reference books," Dr. E. B. STOUFFER; "Curve tracing," Mr. P. W. HORNLEY; "Methods of computing errors," Dr. H. E. JORDAN; "Quadratic forms in number theory," Miss WILMA ARNETTE; "Elements of orbits of heavenly bodies," Miss CORA SHINN; "Mathematical fallacies," Mr. J. B. RAMSEY; "Some definite integrals," Mr. A. W. LARSEN; "The origin of the calculus," Mr. L. L. STEIMLEY; "Finite geometry," Mr. CYRIL NELSON; "Review of *Memorabilia Mathematica*," Miss FLORENCE SCHEIDENBERGER.

Beginning with this issue the MONTHLY becomes the Official Journal of THE MATHEMATICAL ASSOCIATION OF AMERICA, and will be subject to the control of the Council of the ASSOCIATION. Thus the MONTHLY enters a broad field of

usefulness and is assured of wise and efficient support. The Constitution provides that the official journal shall be directly controlled by a Committee on Publication, consisting of a Managing Editor and two other members, who are appointed by the Council and thereby become *ex officio* members of the Council. The Editorial Board consists of the three members of the Publication Committee, together with twelve Associate Editors selected by them. The editorial work is divided among various subcommittees, and all are now laying plans for immediate aggressive action. They will welcome suggestions from all sources, looking toward the strongest possible equipment of the MONTHLY for the important responsibilities now laid upon it.

The Editorial Board for 1916 is as follows:

H. E. Slaughter, *Managing Editor*, University of Chicago,
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 R. D. Carmichael, University of Illinois,
 with the co-operation of
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 U. G. Mitchell, University of Kansas,
 W. H. Roever, Washington University,
 D. A. Rothrock, Indiana University,
 C. S. Slichter, University of Wisconsin,
 D. E. Smith, Columbia University.

NOTES ON THE COLUMBUS MEETING.

A most remarkable circumstance occurred at Columbus, in connection with the choosing of the name for the new organization. A committee of three had been chosen to sift the eighteen proposals and make a recommendation. The committee agreed to act independently and each to make his choice by himself. They did so and each made the same choice. Moreover, five other members, after discussing the matter informally by themselves, also came to the same conclusion. This seemed so remarkable that the final adoption seemed inevitable.

Another interesting feature of the Columbus meeting was the remarkable unanimity of purpose displayed by representatives of all interests concerned. There seemed to be no doubt as to the importance of the opportunity presented to this new organization in its chosen field. There was no lack of serious interest and of genuine enthusiasm.